

# PATENT COOPERATION TREATY

# PCT


## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 20 JUL 2006

WIP

Applicant's or agent's file reference P5029PCT	<b>FOR FURTHER ACTION</b> See Form PCT/PEA/416	
International application No. PCT/GB2005/001245	International filing date (day/month/year) 30.03.2005	Priority date (day/month/year) 01.04.2004
International Patent Classification (IPC) or national classification and IPC INV. B64C25/36		
Applicant DUNLOP AEROSPACE LIMITED et al		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand  17.01.2006	Date of completion of this report  19.07.2006	
Name and mailing address of the International preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Monica S. O. Navarro  Telephone No. +49 89 2399-7376	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2005/001245

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
  - ☐ international search (under Rules 12.3(a) and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4(a))
  - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-7 as originally filed

**Claims, Numbers**

1-12 received on 19.01.2006 with letter of 17.01.2006

**Drawings, Sheets**

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs.
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	1-12
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. None of the available prior art shows an aircraft wheel assembly with all the features of independent claim 1.

1.1. The document EP 0 445 851 (=D1) is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

An aircraft wheel assembly including an axle housing means (30) for sensing wheel speed, one end of the axle being covered by a cap member (60), the cap member (60) comprising a generally cup-like body having an end wall (76) towards the free end of the axle and means for driving the wheel speed sensing means (30) (see cited passages).

1.2. The problem to be solved by the present invention may be regarded as providing an improved hubcap which reduces the noise caused by the airflow over the wheel assembly whilst providing a lighter wheel assembly.

1.3. This is achieved by the side wall of the cap body having at least one stiffening formation arranged to influence the flow of air around the exposed exterior of the cap member in flight whereby to reduce the level of noise generated.

The subject-matter of claim 1 therefore meets the requirements of Articles 33(1)-(3) PCT.

2. Claims 2 to 9 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

3. The document EP 0 445 851 (=D1) is also regarded as being the closest prior art to the subject-matter of claim 10, and discloses (the references in parentheses applying to this

document):

A hubcap for an aircraft wheel assembly which has an axle housing means for sensing wheel speed and means for sensing tyre pressure, the hub cap (60) comprising a generally cup-like body having an end wall (76), the body having a mouth and a flange (70) at said mouth for engagement with clamping means by which the hub cap (60) is fixed on to a free end of the axle and the inner surface of the end wall (76) having formations for engagement with the wheel speed sensing means (30)(see cited passages).

- 3.1. The subject-matter of claim 10 differs from this in that a slot extends from the flange into the side wall of the body to receive components of the means for sensing tyre pressure, and in that ribs are spaced about the exterior of the side wall of the body.
- 3.2. Although D3 shows an aircraft wheel with a tyre pressure means, there is no disclosure of the ribs in the exterior of the hubcap body. As explained above, these ribs increase the stiffness of the hubcap, allowing to reduce its wall thickness, which reduces the overall weight of the wheel assembly. Further, the ribs allow for a smoother airflow around the hubcap, which reduces the noise generated over the wheel assembly.

The subject-matter of claim 10 therefore meets the requirements of Articles 33(1)-(3) PCT.

4. Claims 11 to 12 are dependent on claim 10 and as such also meet the requirements of the PCT with respect to novelty and inventive step.